

Appl. No. 10/004,788
Amdt. Dated May 18, 2005
Reply to Office action of February 18, 2005
Attorney Docket No. P13026-US2
EUS/J/P/05-1124

Amendments to the Claims:

This listing of claims replaces all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) Method for power saving in a mobile terminal comprising a NIC, wireless Network Interface Card (NIC), ~~used in for accessing a wireless LAN (WLAN), WLAN or the like~~ having one an access point (AP), ~~said card either externally plugged in or built in or integrated in the mobile terminal, wherein the WLAN uses HIPERLAN Type 2 or IEEE 802.11 power save procedures and in which wherein the mobile terminal uses an operating system supporting a plurality of device power states, e.g. the OnNow device power states (D0-D3), in which said method comprising the steps of:~~

the mobile terminal ~~requests (1)~~ requesting a transition from an active state D0 to a less active state D3 ~~(or D2 or D1);~~;

upon which request the NIC requests the ~~access-point~~ AP to be entered into WLAN sleep state[[,]] ; and,

on acknowledgement from the ~~access-point~~ AP the mobile terminal enters WLAN sleep state.

2. (Cancelled)

3. (Currently Amended) Method for power saving in a mobile terminal comprising a NIC, wireless Network Interface Card (NIC), ~~used in for accessing a wireless LAN[[,]] (WLAN) or the like in an ad hoc network, said card either externally plugged in or built in or integrated in the mobile terminal, wherein the WLAN uses HIPERLAN Type 2 or IEEE 802.11 power save procedures and in which wherein the mobile terminal uses an operating system supporting a plurality of device power states, e.g. the OnNow device power states (D0-D3), in which said method comprising the steps of:~~

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the mobile terminal ~~requests (II)~~ requesting a transition from an active state D0 to a less active state D3 ~~(or D2 or D1)~~ ;

upon which request the NIC requests a ~~further~~ second mobile terminal in the ad hoc network, ~~i.e. the mobile terminal~~ to be entered into WLAN sleep state[[.]] ; and,

on acknowledgement from the ~~further~~ second mobile terminal the mobile terminal enters WLAN sleep state.

4. (Cancelled)

5. (Currently Amended) Method for power saving in a mobile terminal comprising a NIC, wireless Network Interface Card (NIC), ~~used in for accessing a wireless LAN[[.]] (WLAN), or the like having one an access point (AP), said card either eternally plugged in or built in or integrated in the mobile terminal,~~ wherein the WLAN uses HIPERLAN Type 2 or IEEE 802.11 power save procedures and ~~in which wherein~~ the mobile terminal uses an operating system supporting a plurality of device power states, e.g. the OnNew device power states (D0-D3), in which said method comprising the steps of:

the mobile terminal, due to inactivity, requests ~~(IV)~~ a transition from an active state D0 to a less active state D3 ~~(or D2 or D1)~~;

upon which request the NIC ~~and/or~~ mobile terminal requests the ~~access point AP~~ to be disassociated ~~and/or~~ de-authenticated from the ~~access point AP~~; and,

on acknowledgement from the ~~access point AP~~, the mobile terminal enters a disassociated ~~and/or~~ de-authenticated state.

6. (Cancelled)

7. (Currently Amended) Method according to claim 1 in which the mobile terminal/NIC is disassociated ~~and/or~~ de-authenticated from the AP without using a disassociation ~~and/or~~ de-authentication signal.

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8. (Currently Amended) Method for power saving in a mobile terminal comprising a ~~NIC~~, wireless Network Interface Card (NIC), ~~used in for accessing a~~ wireless LAN[~~[,]~~] (WLAN) ~~or the like in an ad hoc network, said card either externally plugged in or built in or integrated in the mobile terminal,~~ wherein the WLAN uses HIPERLAN Type 2 or IEEE 802.11 power save procedures and ~~in which~~ wherein the mobile terminal uses an operating system supporting a plurality of device power states, ~~e.g. the OnNew device power states (D0-D3), in which said method comprising the steps of:~~

the mobile terminal, due to inactivity, requests ~~(H)~~ a transition from an active state D0 to a less active state D3 ~~(or D2 or D4);~~

upon which request the ~~NIC and/or~~ mobile terminal requests a further second mobile terminal in the ad hoc network to be disassociated ~~and/or~~ de-authenticated from the ad hoc network; and,

on acknowledgement from the further second mobile terminal, the mobile terminal enters a disassociated ~~and/or~~ de-authenticated state.

9. (Cancelled)

10. (Currently Amended) Method according to claim 3 in which the mobile terminal/~~NIC~~ is disassociated ~~and/or~~ de-authenticated from the ad hoc network without using a disassociation ~~and/or~~ de-authentication signal.

11. (Currently Amended) Method according to claim 1 in which the mobile terminal/~~NIC~~ associates ~~and/or~~ authenticates to the ~~access~~-point AP on transition from a less active state D3 ~~(or D2 or D4)~~ to D0 a more active state.

12. (Currently Amended) Method according to claim 3 in which the mobile terminal/~~NIC~~ joins an ad hoc network by associating ~~and/or~~ authenticating to the ad hoc network on transition from a less active state D3 ~~(or D2 or D4)~~ to D0 a more active state.

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13. (Currently Amended) Method for power saving in a mobile terminal comprising a NIC, wireless Network Interface Card (NIC), ~~used in for accessing a wireless LAN[[,]] (WLAN) or the like having one an access point (AP), said card either externally plugged in or built in or integrated in the mobile terminal wherein the WLAN uses HIPERLAN Type 2 or IEEE 802.11 power save procedures and in which wherein~~ the mobile terminal uses an operating system supporting a plurality of device power states, e.g. the OnNow device power states (D0-D3), in which said method comprising the step of:

the mobile terminal forces forcing the NIC down to D3 cold or D3 initialise a less active state at a point of time later than a time-out interval due to inactivity as defined in said power save procedures in order to lower the system state.

14. (Original) Method for power saving according to claim 13, in which the method also comprises the step of the mobile terminal forcing the NIC from D3 cold or D3 initialise to a higher power state, when activity is detected or when data is pending for transmission.

15. (Original) Method according to claim 13 in which a timer in the mobile terminal is used to initiate the mobile terminal to power down the NIC.

16. (Original) Method according to claim 1 in which the NIC enters its lowest power consumption mode.

17. (Currently Amended) Method for power control in a mobile terminal comprising a NIC, wireless Network Interface Card (NIC), ~~used in for accessing a wireless LAN[[,]] (WLAN) or the like having one an access point (AP), said card either externally plugged in or built in or integrated in the mobile terminal/PC, wherein the WLAN uses HIPERLAN Type 2 or IEEE 802.11 power save procedures and in which die wherein the~~ mobile terminal uses an operating system supporting a plurality of

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device power states, ~~e.g. the OnNow device power states (D0-D3),~~ in which said method comprising the steps of:

the mobile terminal, being when in a low power mode, ~~e.g. D3, D2, or D1,~~ requests transition to an active state ~~D0;~~

upon which request the NIC requests the ~~access-point AP~~ to be entered into WLAN active state[~~(,)~~]; and,

~~in which~~ the mobile terminal enters the WLAN active state on acknowledgement from the ~~access-point AP.~~

18. (Currently Amended) Method for power control in a mobile terminal comprising a NIC, wireless Network Interface Card (NIC), ~~said card either externally plugged in or built in or integrated in the mobile terminal, and used in~~ for accessing a wireless LAN[~~(,)~~] (WLAN) ~~or the like~~ in an ad hoc network, said network comprising at least ~~one further~~ a second mobile terminal, wherein the WLAN uses HIPERLAN Type 2 or IEEE 802.11 power save procedures and ~~in which wherein~~ the mobile terminal uses an operating system supporting a plurality of device power states, ~~e.g. the OnNow device power states (D0-D3),~~ in which said method comprising the steps of:

the mobile terminal, being in a low power mode, ~~e.g. D3, D2, or D1,~~ requests transition to an active state ~~D0;~~

upon which request the NIC requests the ~~further~~ second mobile terminal to be entered into WLAN active state[~~(,)~~]; and,

~~in which~~ the mobile terminal enters the WLAN active state on acknowledgement from the ~~further~~ second terminal.

19. (Currently Amended) Method according to claim 5 in which the mobile terminal/NIC is disassociated and/or de-authenticated from the AP without using a disassociation and/or de-authentication signal.

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20. (Currently Amended) Method according to claim 8 in which the mobile terminal/NIC is disassociated ~~and/or~~ de-authenticated from the ad hoc network without using a disassociation ~~and/or~~ de-authentication signal.

21. (Currently Amended) Method according to claim 5 in which the mobile terminal/NIC associates ~~and/or~~ authenticates to the ~~access point~~ AP on transition from a less active state ~~D3 (or D2 or D4)~~ to D0 a more active state.

22. (Currently Amended) Method according to claim 8 in which the mobile terminal/NIC joins an ad hoc network by associating ~~and/or~~ authenticating to the ad hoc network on transition from a less active state ~~D3 (or D2 or D4)~~ to D0 a more active state.

23. (Original) Method according to claim 3 in which the NIC enters its lowest power consumption mode.

24. (Original) Method according to claim 5 in which the NIC enters its lowest power consumption mode.

25. (Original) Method according to claim 8 in which the NIC enters its lowest power consumption mode.
